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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/453,525	12/03/1999	TATSUZO HASEGAWA	Q56957	2758

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EXAMINER

GRAHAM, ANDREW R

ART UNIT	PAPER NUMBER
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2644

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DATE MAILED: 03/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Advisory Action

Application No.

09/453,525

Applicant(s)

HASEGAWA ET AL.

Examiner

Andrew Graham

Art Unit

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--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 12 February 2004 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

PERIOD FOR REPLY [check either a) or b)]

- a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.
- b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.
- ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1. ☐ A Notice of Appeal was filed on _____. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.
2. ☐ The proposed amendment(s) will not be entered because:
- (a) ☐ they raise new issues that would require further consideration and/or search (see NOTE below);
- (b) ☐ they raise the issue of new matter (see Note below);
- (c) ☐ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
- (d) ☐ they present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: _____.

3. ☐ Applicant's reply has overcome the following rejection(s): _____.
4. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
5. ☒ The a) ☐ affidavit, b) ☐ exhibit, or c) ☒ request for reconsideration has been considered but does NOT place the application in condition for allowance because: See attached sheet for details.
6. ☐ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.
7. ☐ For purposes of Appeal, the proposed amendment(s) a) ☐ will not be entered or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

The status of the claim(s) is (or will be) as follows:

Claim(s) allowed: _____.

Claim(s) objected to: _____.

Claim(s) rejected: _____.

Claim(s) withdrawn from consideration: _____.

8. ☐ The drawing correction filed on _____ is a) ☐ approved or b) ☐ disapproved by the Examiner.
9. ☐ Note the attached Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____.
10. ☐ Other: _____


MINSUN OH HARVEY
PRIMARY EXAMINER


Andrew Graham

Response to Arguments

Applicant's remarks filed February 12, 2004 have been fully considered but they are not persuasive.

On page 2, lines 13-16, the applicant has stated, "Maehara repeatedly refers to the 'potential' as a voltage". The examiner respectfully submits that a "potential" is measured in terms of voltage, but that Maehara uses the phrases "potential" and "voltage" to refer to different measurements of voltage. The examiner maintains, as stated in lines 2-6 of page 12 of the previous action, that "potential" is used by Maehara to refer to the difference in charge across the speaker. "Voltage" is used by Maehara to describe a difference between a charge and ground, as reference voltage " V_{ref} " and battery voltage " V_b " are clearly shown as grounded in Figure 3. In contrast, the charge or "potential" at point A does not ever reach ground, rather, is passed across the speaker between the two outputs of the amplifiers (15A,15B). To determine the "potential" at point A, the voltage against which the voltage at point A is being compared to must be known. Because the speaker is not grounded, this second voltage is the voltage at the other input of the speaker, the output voltage of the second amplifier (15B). Maehara refers to " V_A " throughout the reference as a "potential" and not a "voltage". In the context of Maehara's usage of the terms, the applicant's reference to " V_A " of Figure 3 as a "voltage" in line 11 of page 2 of the submitted response is incorrect, again, even though the "potential" at this point is measured in terms of voltage.

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On page 2, lines 19-20, the applicant has stated, "The Examiner's statements contradict the express teachings of the reference" in reference to the statement that the comparator 'has to know' the difference between the two signals to know the output level. The examiner respectfully disagrees. The amplifier arrangement used in the system of Maehara is a balanced transformerless (BTL), or bridged, amplifier arrangement, which means that the charge applied across the speaker, equivalent to the output level of the speaker, is the difference between the two inputs to the speaker, which are respectively supplied by two amplifiers (Column 6, lines 36-38 of Maehara confirms the use of a BTL arrangement, along with Figure 3). This is what was intended to be understood by the phrase "has to know" in the previous office action, in that, the level of the amplified signal is based on the voltage drop across the speaker, and thus by comparing the level of the amplified signal to a reference voltage, the comparator must inherently be obtaining the difference of the signal levels applied across the speaker. Column 5, lines 6-13 clearly state that the reference voltage and the level of the amplified signal are being compared. The passage from Maehara cited by the applicant confirms this position in that the comparator involves the electric potential V_A . Again, the interpretation of the word "potential" as a difference in charges across a load is discussed in the above paragraph.

On page 3, lines 10-13, the applicant has stated, "it appears that the comparator 14A adds the voltage of amplifiers 15A and 15B...and

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determines a differential value between the reference voltage V_{ref} and the sum of the amplifiers 15A and 15B". The examiner respectfully disagrees with this interpretation, based on a consideration of the signals presented to the comparator (14A). The signals from the two amplifiers (15A,15B) are derived from an input signal (AS), but the signal applied to the second amplifier (15B) is inverted by an inverter (shown in Figure 3) before being input. This means that the outputs of the two amplifiers (15A,15B), presuming an ideal application of an equal gain to both input signals, are of equal absolute value, but are of opposite sign. Figure 3 illustrates a direct connection of these two output signals to terminals of the comparator labeled with a "plus" sign. However, if these terminals were considered to conduct an actual addition of these two amplifier output signals (15A,15B), then the combination of the two signals would always be zero and the collective level upon which the comparator makes its decision output would always be $-V_{ref}$. This clearly conflicts with how Maehara describes the operation of the system. Conversely, Maehara discloses that the output voltage of the amplifying unit (15), which is equal to the potential V_a , is detected by the switching circuit (14) and compared to a reference voltage (V_{ref}) (col. 6, lines 18-31). Again, as stated above, the output level of a speaker in the BTL, or bridged, arrangement as shown in Figure 3, is the difference between the voltages across the speaker. This means that to determine the same amplified output signal level for another part of the system, the other part of the system would also need the

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same two input signals applied to the speaker. The examiner submits that this is why both signals, and not just the output signal from the first amplifier (15A) are supplied to the comparator. In regards to the comparison made by the comparator, both of these amplifier output signals are part of the potential V_A from which the reference voltage V_{ref} is subtracted (col. 6, lines 23-31). This may or may not explain why both input terminals of the amplifier output signals applied to the comparator (14A) are labeled "+". The labeling of these input terminals is not addressed in the disclosure of the Maehara reference. Regardless of the reasoning behind these labels, the description of the operation of the system, along with the fundamental operation of the components in the the illustrated embodiments, supports the concept that the comparator does determines a voltage potential for the amplified audio signal, wherein this potential is the difference of the two output signals of the amplifying unit (15).

The response presented above applies specifically to the relevant limitations of both independent claims 1 and 9 of the present application. In the remarks submitted by the applicant on February 12, 2004, the applicant presents no other issues or arguments involving the dependent claims. Accordingly, the response above thus applies to the remarks supplied for each of the claims 1-21 of the present application.